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| (21) International Application Number: PCT/US99/23685 (22) International Filing Date: 12 October 1999 (12.10.99) (30) Priority Data: 60/103,860 12 October 1998 (12.10.98) US (71) Applicant (for all designated States except US): MALLINCK-RODT INC. [US/US]; Lawrence L. Limpus, P.O. Box 5840, 675 McDonnell Boulevard, St. Louis, MO 63134 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): CANTRELL, Gary, L. [US/US]; 509 Lakewood Drive, Troy, IL 62294 (US). (74) Agent: LIMPUS, Lawrence, L.; Mallinckrodt Inc., 675 McDonnell Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US). | | (81) Designated States: AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |
| (54) Title: NOVEL ULTRASOUND CONTRAST AGENTS | | |
| (57) Abstract <p>New and structurally distinct ultrasound contrast agents that comprise micron size microbubbles encapsulating a gas within a shell made from a blend of bipolar compounds having inter-molecular hydrophobic regions of mixed carbon chain length. The compounds have the following structure: R_1-X-Z; R_2-X-Z; and R_3-X-Z', where R_1, R_2 and R_3 are hydrophobic groups selected from the group consisting of straight-chained alkyls, alkylethers, alkylthioethers, alkyldisulfides, polyfluoroalkyls, and polyfluoroalkylethers having a carbon chain length greater than or equal to 16 and less than or equal to 32 and where R_1 is greater than R_2 and R_1 is greater than or equal to R_3; R_3 has one or more such hydrophobic groups having the same or different lengths; X is a linker connecting the hydrophobic group to the polar head group; Z is a polar head group selected from the group consisting of CO_2-M^+, SO_3-M^+, SO_4-M^+, PO_3-M^+, PO_4-M^{+2}, $N(R)_4^+$, a pyridinium or substituted pyridinium group, and a zwitterionic group; R is selected from the group consisting of $-H$, $-CH_3$, alkyl, cycloalkyl, substituted cycloalkyls containing one or more heteroatoms, and benzyl and can be the same or different; and Z' is a nonionic group.</p> | | |